

September 2–22, Finca of the brothers Hundriesser in the Atlantic coastal region, between the rivers Reventazon and Parasma).

October and November: sick.

December 4, Carpintera; 17, Candelaria.

1910: January s.d., Turrialba; 20, Finca Schild-Burgdorf (rio Surubres).

February 9, Finca Schild-Burgdorf (rio Surubres); 10–13, Cerro Turubales; 26, Granadilla.

March 5, La Verbena; 11, Candelaria; 17, La Palma; 28–31, Juan Viñas, region of the rio Chis; April s.d., Turrialba [14? eruption of Volcán Poas]; 16, Cartago; 22, San Jerónimo de Grecia (region of Zisma, Poas); 25–May 7, trip to Llanuras de San Carlos (Naranjo, Zarcero, Buena Vista, Finca Koschny).

April (see above).

May 1–7, conclusion of trip to Llanuras de San Carlos [7, catastrophic earthquake destroys Cartago]; 10, Cartago, Aguacaliente.

June 2, Tablazo; 12, Turrialba; 22, La Palma.

July s.d., Quassimo; s.d., Finca de los Padres.

August 21, departure from Puerto Limón.

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***Asplenium* × *alternifolium* in the Black Hills of South Dakota.**—On September 19, 1998, we discovered one individual of *Asplenium* × *alternifolium* Wulfen on the north side of the Iron Creek drainage ca. 14 air km northeast of the town of Custer, Custer County, South Dakota. This area has numerous large outcrops of the Precambrian Harney Peak granite. The plant was found on the south face of a large rock massif ca. 100 meters in height, on a shaded microsite in a deep crack 30 meters above the ground. The elevation of the site is 1023 m (5400 ft.). Many fronds with sori were present. No other individuals were found in a survey of the massif and other nearby outcrops. The individual was growing vigorously when revisited on July 5, 1999. That year, two additional individuals were found in similar habitat at a second site ca. 6.5 km southwest of the original discovery. Material was sent to Dr. Robbin Moran (NY) for identification; vouchers (Marriott 11782, 11786) with photographs have been deposited at NY and RM.

Asplenium × *alternifolium* is a sterile hybrid between *Asplenium septentrionale* and *Asplenium trichomanes*, both of which occur at the sites. *Asplenium septentrionale* is common throughout the granitic Central Core region of the Black Hills. *A. trichomanes* is uncommon in the area, and is sufficiently rare to be tracked by the South Dakota Natural Heritage Program. The Black Hills populations most likely are the diploid cytotype, which occurs primarily on acidic rocks, including granites (Moran, Amer. Fern J. 72: 5–11. 1982). The hybrid was first collected in North America in West Virginia (Wagner *et al.*,

Castanea 56: 128–134, 1991). It is considered common in Europe and rare in the eastern United States. The South Dakota locations are disjunct by more than 2000 km from the sites reported by Wagner *et al.*—HOLLIS MARRIOTT, 655 N. Cedar St., Laramie, WY 82072, and JAN AND HERB CONN, HCR 83 Box 93, Custer, SD 57730.

***Dryopteris goldiana* and its Hybrid with *D. celsa* New to Arkansas.**—Wood Ferns (*Dryopteris*) were studied intensively in Arkansas for twenty years (Peck *et al.*, Amer. Fern J. 75:71, 1985; Peck and Peck, Proc. Arkansas Acad. Sci. 42: 74–78, 1988; Peck and Taylor, Proc. Arkansas Acad. Sci. 49:130–137, 1995), yet surprises remain to be found in a state with no less than 16 previous lists of its pteridophyte flora. *Dryopteris celsa* (W. Palmer) Knowlton, Palmer & Pollard was discovered in the Ozark National Forest, Sylamore District, in 1992 by Phil Hyatt [4947.03 (UARK)]. J. H. Peck's efforts in 1997 and 1998 to relocate and inventory that population were unsuccessful. Unfortunately, the specimen's label coordinates were incorrect, being off by six miles to the west. Earl Hendrix relocated the population and told Peck that "more than *D. celsa* is present." A brief visit by Hendrix and Peck on 20 July 1999 confirmed that it was a most exceptional woodfern community for Arkansas. We noted three species plus three hybrids of *Dryopteris*, including a species and a hybrid new to Arkansas. Additional specimens, locality data, and habitat observations were gathered by Theo Witsell on 27 November 1999. All specimens are deposited at LRU.

The locality (Merrill Ridge Road Blowing Cave, Baxter Co., AR, T17N, R12W, S30, Norfolk SE Quad.), is located in a remote portion of north-central Arkansas within the Sylamore District, Ozark National Forest. The locality has three special microhabitats for Arkansas, including limestone bed-rock, a breakdown strewn and partially blocked entrance of a blowing-cave, and a hillside seep and stream located on a north-facing toe-slope. These microhabitats occur at the bottom of a forested ravine with 100 m of vertical relief. The associated vegetation is composed of canopy trees such as *Carya* spp., *Nyssa sylvatica*, *Quercus alba*, and *Quercus rubra*, with understory plants of *Cornus florida*, *Rhamnus caroliniana*, *Vaccinium pallidum*, and *Vitis rotundifolia*. The adjacent Stewart Fork stream, cave-cooled spring-seepage water, and cool-blowing air from the cave provide a cool, moist, and moderated local environment.

This is a very protective habitat for ferns of a more northerly habitat and range. The humus-rich soils on the toe-slope supports three species of *Dryopteris*, including five plants of *D. goldiana* (Hooker ex Goldie) A. Gray [Peck 99417 (LRU)]. Adjacent to the seepage area and stream are several dozen plants of *D. celsa* (Palmer) Knowlton, Palmer, & Pollard. *Dryopteris marginalis* (L.) A. Gray occurs throughout the valley at various elevations on or near rock outcrops. This population of *D. goldiana* occurs at the extreme southwestern edge of its range, modestly disjunct about 200 km from outliers in Missouri,